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| 10/614,518      | 07/08/2003  | Kiminori Tamai       | 240077US0DIV        | 7631             |

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EXAMINER

MAZUMDAR, SONYA

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1734

DATE MAILED: 11/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/614,518

Applicant(s)

TAMAI ET AL.

Examiner

Sonya Mazumdar

Art Unit

1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/859,386.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 provides for a method where a compressed microparticulate-containing layer does not have cracks even when drawn 10%, but, this “drawing” is not recited as a positive step and thus is not clear as to whether it is part of the method of producing a functional film.

Claim 18 provides for a method where a compressed microparticulate-containing layer exhibits a surface resistivity after being drawn 10% which is at most 10 times greater than the surface resistivity prior to drawing, but, this “drawing” is not recited as a positive step and thus is not clear as to whether it is part of the method of producing a functional film.

3. Claims 10 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear why peel strength is recorded in units of force per unit length, when peel strength is normally recorded in units of force (see Standard AS5127/1,8.1; US 5039552 – column 4, line 65).

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 9, 10, 12, 14, and 15 are rejected under 35 U.S.C. 102(e) as being unpatentable over Bottari (US 6280552).

With respect to claim 9, Bottari teaches a method of applying an electrode pattern to a touch screen panel. A conductive pattern is first applied by screen printing on a standard decal paper, such as a water-slide paper (column 5, lines 34-37). The electrode pattern is removed from the decal paper and transferred to a touch screen panel. Because the normal practice is to slide the electrode pattern and decal paper away from each other, no cracks or deformations in the pattern are taught. The electrode pattern is made sure to be adhered to the touch screen panel and follows the shape of the panel without compromising the quality of the pattern (Figure 2; column 5, lines 48-65). No binder is taught in the conductive electrode pattern.

With respect to claim 10, Bottari teaches a method as discussed in claim 9, but he does not specifically teach a peel strength concept. However, when the structure recited in the reference is substantially identical to that of the claims, claimed properties (i.e. peel strength) are presumed to be inherent. Where the claimed and prior art

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products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). (See MPEP § 2112.01)

With respect to claim 12, Bottari teaches a method where the target substrate is a glass substrate (column 5, lines 5-6).

With respect to claim 14, Bottari teaches a method where the electrode pattern formed is conductive. (column 5, lines 33-34).

With respect to claim 15, Bottari teaches a method where the electrode pattern is made from conductive inks comprising conductive particles or conductive polymers (column 6, lines 11-18).

6. Claims 18, 19, 21, 23, and 24 are rejected under 35 U.S.C. 102(e) as being unpatentable over Bottari.

With respect to claim 18, Bottari et al. teaches a method of applying an electrode pattern to a touch screen panel. The pattern is first applied by screen printing on a standard decal paper, such as a water-slide paper (column 5, lines 34-37). The electrode pattern is removed from the decal paper and transferred to a touch screen panel. Because the normal practice is to slide the electrode pattern and decal paper away from each other, no cracks or deformations in the pattern are taught. The electrode pattern is made sure to be adhered to the touch screen panel and follows the shape of the panel without compromising the quality of the pattern (Figure 2; column 5, lines 48-65). No binder is taught in the conductive electrode pattern.

Bottari teaches the claimed materials and process steps ~~this~~ it is submitted that the product produced would exhibit the claimed properties. "When the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977)." (See MPEP § 2112.01)

With respect to claim 19, Bottari teaches a method as discussed in claim 18, but he does not specifically teach a peel strength concept. However, when the structure recited in the reference is substantially identical to that of the claims, claimed properties (i.e. peel strength) are presumed to be inherent. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). (See MPEP § 2112.01)

With respect to claim 21, Bottari teaches a method where the target substrate is a glass substrate (column 5, lines 5-6).

With respect to claim 23, Bottari teaches a method where the electrode pattern formed is conductive. (column 5, lines 33-34).

With respect to claim 24, Bottari teaches a method where the electrode pattern is made from conductive inks or conductive polymers (column 6, lines 11-18).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claim 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bottari as applied to claim 9 in view of over Seeger, Jr. et al.

The teachings of claim 9 are as described above. With respect to claim 11, Bottari does not teach a method of forming an adhesive layer on the electrode pattern before being transferred to the touch screen panel. Seeger, Jr. et al. teaches applying an adhesive over metal particles before being transferred to another substrate (Figure 3B and 6; column 2, lines 38-40).

It would have been obvious to one of ordinary skill in the art to apply an adhesive layer over the electrode pattern taught by Bottari. One would have been motivated to do so to increase the bond strength between the pattern and the touch screen panel.

With respect to claim 13, Bottari teaches a method of coating the decal sheet with an electrode pattern and then drying it. However, Bottari does not teach compression of the electrode pattern. Seeger Jr. et al. teaches coating the circuit board and using heat and pressure to dry and further compact the metal powder (column 2, lines 36-43).

It would have been obvious to one of ordinary skill in the art to use pressure to further compact the electrode pattern taught by Bottari. One would have been motivated to do so to create a more uniform coating on the substrate.

10. Claim 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bottari as applied to claim 9 in view of Leverenz et al. (US 6214247)

The teachings of claim 9 are described above. With respect to claim 16, Bottari teaches a method of forming an electrode pattern with a metal/glass frit mixture, namely silver/frit. Leverenz et al. teaches coating the substrate with aluminum oxide; this treatment is used in the manufacture and treatment of electrodes (column 3, lines 33-38; column 4, lines 11-12).

It would have been obvious to one of ordinary skill in the art to use aluminum oxide particles in the electrode pattern taught by Bottari. One would have been motivated to do so because aluminum oxide will assist in wear and corrosion resistance and exhibits the desired surface resistivity.

With respect to claim 17, Bottari teaches a method of coating an electrode pattern, however, it is thicker than the desired amount. Leverenz et al. teaches a

method of coating with a conductive material to a substrate that has been etched in the range of 3 to 15 microns deep.

It would have been obvious to one with ordinary skill in the art to coat the initial substrate in smaller amounts because too great a depth would weaken the surface of the substrate. However, any coating process used to deposit wear-resistant material on a composite material substrate etched by the method taught by Leverenz et al. is carried out under conditions by which the wear-resistant material may at least partially infiltrate the voids in the composite material created by removal of the binder material. One of ordinary skill may readily determine such conditions without undue experimentation (column 7, lines 13-17; column 8, lines 47-62). "Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." (MPEP § 2144.05)

11. Claim 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bottari as applied to claim 18 in view of over Seeger, Jr. et al.

The teachings of claim 18 are as described above. With respect to claim 20, Bottari does not teach a method of forming an adhesive layer on the electrode pattern before being transferred to the touch screen panel. Seeger, Jr. et al. teaches applying an adhesive over metal particles before being transferred to another substrate (Figure 3B and 6; column 2, lines 38-40).

It would have been obvious to one of ordinary skill in the art to apply an adhesive layer over the electrode pattern taught by Bottari. One would have been motivated to do so to increase the bond strength between the pattern and the touch screen panel.

With respect to claim 22, Bottari teaches a method of coating the decal sheet with an electrode pattern and then drying it. However, Bottari does not teach compression of the electrode pattern. Seeger Jr. et al. teaches coating the circuit board and using heat and pressure to dry and further compact the metal powder (column 2, lines 36-43).

It would have been obvious to one of ordinary skill in the art to use pressure to further compact the electrode pattern taught by Bottari. One would have been motivated to do so to create a more uniform coating on the substrate.

12. Claim 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bottari as applied to claim 18 in view of Leverenz et al. (US 6214247)

The teachings of claim 18 are as described above. With respect to claim 24, Bottari teaches a method of forming an electrode pattern with a metal/glass frit mixture, namely silver/frit. Leverenz et al. teaches coating the substrate with aluminum oxide; this treatment is used in the manufacture and treatment of electrodes (column 3, lines 33-38; column 4, lines 11-12).

It would have been obvious to one of ordinary skill in the art to use aluminum oxide particles in the electrode pattern taught by Bottari. One would have been motivated to do so because aluminum oxide will assist in wear and corrosion resistance and exhibits the desired surface resistivity.

With respect to claim 25, Bottari teaches a method of coating an electrode pattern, however, it is thicker than the desired amount. Leverenz et al. teaches a

method of coating with a conductive material to a substrate that has been etched in the range of 3 to 15 microns deep.

It would have been obvious to one with ordinary skill in the art to coat the initial substrate in smaller amounts because too great a depth would weaken the surface of the substrate. However, any coating process used to deposit wear-resistant material on a composite material substrate etched by the method taught by Leverenz et al. is carried out under conditions by which the wear-resistant material may at least partially infiltrate the voids in the composite material created by removal of the binder material. One of ordinary skill may readily determine such conditions without undue experimentation (column 7, lines 13-17; column 8, lines 47-62). "Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." (MPEP § 2144.05)

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sonya Mazumdar whose telephone number is (571) 272-6019. The examiner can normally be reached on 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SM



CHRIS FIORILLA  
SUPERVISORY PATENT EXAMINER

*Au 1734*